Glossary of Terms

Pain	An unpleasant sensory and emotional experience associated with actual or potential tissue damage, or describe in terms of such damage.
Hyperalgesia	An increased response to a stimulus that is normally painful
Allodynia	Pain due to a stimulus that does not normally provoke pain
Hypoalgesia	Diminished pain in response to a normally painful stimulus
Dysesthesia	An unpleasant abnormal sensation, whether spontaneous or evoked
Neurogenic pain	Pain initiated or caused by a primary lesion, dysfunction, or transitory perturbation in the peripheral or central nervous system
Neuropathic pain	Pain initiated or caused by a primary lesion or dysfunction in the nervous system
Pain threshold	The least experience of pain that a subject can recognize
Pain tolerance	The greatest level of pain that a subject is prepared to tolerate
Pain behaviour	A pattern of audible or observable actions, posture, facial expressions, and verbalizations
Referred pain	Spontaneous pain outside the area injury
Noxious stimulus	An actually or potentially tissue-damaging stimulus
Nociceptor	A sensory receptor that is capable of transducing and encoding a noxious stimulus
Cutaneous nociceptor	The free nerve endings of cutaneous Aδ and C nociceptors respond to noxious mechanical and/or thermal stimuli. Many cutaneous nociceptors can respond to multiple noxious stimuli (mechanical, thermal and chemical) and are hence called *polymodal* nociceptors. A third classification of cutaneous nociceptors are *silent or mechanically insensitive* and are activated by inflammatory mediators (ie. Prostaglandins). Cutaneous nociceptors are activated by noxious mechanical, heat or cold stimulus.
Muscle & Joint nociceptors	Group III afferent (thinly myelinated) and Group IV afferent (unmyelinated) fibres transmit nociceptive information from free nerve endings in the periphery to the spinal cord dorsal horn. Activation of a joint nociceptor involves stretching of the joint capsule at end range or pressure on the capsule. Muscle nociceptors are activated by pressure and ischemia.
Visceral Nociceptors	Primary afferent fibres innervating the viscera consist entirely of Aδ and C fibres. These nociceptors are considered polymodal and respond to mechanical heat and chemical stimuli. Distension in a hollow visceral organ will stimulate a visceral nociceptor
Silent Nociceptors	Silent nociceptors are located in joint, skin and viscera. Substances released as a result of injury (i.e inflammatory mediators) may sensitize these nociceptors allowing them to fire in response to lower intensity stimuli (i.e. peripheral sensitization).
Nociceptive neuron	A central or peripheral neuron that is capable of encoding noxious stimulus
Nociception	The neural process of encoding and processing noxious stimuli
Nociceptive pain	Pain arising from activation of nociceptors
Sensitization	Increased responsiveness of neurons to their normal input or recruitment of a response to normally subthreshold inputs

Peripheral sensitization	Increased responsiveness and reduced threshold of nociceptors to stimulation of their receptive fields
Central sensitization	Increased responsiveness to nociceptive neurons in the central nervous system to their normal or subthreshold afferent input
Afferent nerves	Any nerve that transmits impulses from the periphery toward the central nervous system
Efferent nerves	Any nerve that carries impulses from the central nervous system towards the periphery, as a motor nerve.
Neural Mechanosensitization	A peripheral neuritis with minimal peripheral nerve injury, resulting in hypersensitization of nociceptors, Aδ fibres, & C-fibres

Sluka KA (ed). Mechanisms and Management of Pain for the Physical Therapist. IASP Press, Seattle, WA, 2009.

BASIC INFORMATION

Back track & reminders... Here are your cheat-sheets for moving forwards:

Table 2.1 Afferents of the Peripheral Nervous System (adapted from Hoeger Bement & Sluka 2007)

Afferent Nerves	Skin	Muscle		Joint
Thickly Myelinated	Aβ = touch	Ia = muscle spindles	AII = proprioceptive	III = proprioception
		Ib = GTO		
		II = muscle spindles		
Thinly myelinated	Aδ = nociceptors	III = nociceptor		III = nociceptor
Unmyelinated	C = nociceptor	IV = nociceptor		IV = nociceptor

Table 2.2 Actions of the proprioceptive peripheral nervous system receptors (adapted from Galea 2004)

Ia fibres from the muscle spindles	These make monosynaptic excitatory synapses on their own motoneurons & disynaptic inhibitory synapses onto antagonistic motoneurons. Thus, stretch of muscle spindles = contraction of the stretched muscles and reciprocal inhibition of antagonists. This is a stretch reflex.
Ib fibres from the Golgi Tendon Organs	These make disynaptic inhibitory connections with motoneurons & excitatory connections with antagonists. Thus, the opposite of a stretch reflex occurs. GTOs are sensitive to tension from muscle contractions, so muscle contractions stimulate the GTO to reduce muscle contraction of that muscle but increase excitation of the opposing muscle.
II fibres from muscle spindles	These make disynaptic connections onto motoneurons, with excitation directed mainly to flexors and inhibitory to extensors.
"Flexor-reflex afferents"	These react to noxious stimuli to the skin, resulting in a withdrawal of the leg and are mediated by a wide range of receptors

PAIN MANAGEMENT HANDOUTS
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